C.I.P.S.

MODELE MATHEMATIQUE DE LA
POLLUTION EN MER DU NORD

TECHNICAL REPORT
I973/02-BIOL.OI

This paper not to be cited without prior reference to the author

ETUDE DU ZOOPLANCTON DE LA CROISIERE 02
AVRIL - MAI 1973

M. BOSSICART
Laboratorium voor Ekologie en Systematiek
VRIJE UNIVERSITEIT BRUSSEL

A. Composition qualitative

La diversité est peu importante car le zooplancton n'est pas encore développé. On observe la dominance des copépodes de tous les stades (environ 85 % du zooplancton) et l'apparition des larves de lamellibranches (points 7 -6-5-3). Le nombre important de nauplii de copépodes est une indication de début de bloom.

B. Composition quantitative en nombre

On observe que dans le Sud du réseau de prélèvement (points 1 à 15) le nombre d'individus / m^3 est deux fois plus grand que dans le Nord (points 16 à 25). Au point 6 (point de dumping présumé) la composition qualitative est la même qu'ailleurs, mais le nombre d'individus est cinq fois moins grand.

Les points 1, 5 et 12, qui habituellement ont un petit nombre d'individus sont pour cette croisière les plus riches.

C. Composition quantitative en poids

La composition quantitative en poids varie à peu près de la même manière que la situation en nombre, ceci est dû essentiellement à la faible diversité du zooplancton et aux proportions semblables à toutes les stations.
Le transect 1-4 montre une diminution sensible de la côte au large.
Les transects 5-10 et 11-15 et 21-25 montrent des situations perturbées.
Le transect 16-20 montre une diminution du large vers la côte.

ZOOPLANCTON EKOLOGIE EN SYSTEMATIEK V.U.B.

CRUISE 02 - 1973 18-4:3-5-1973

STATION 1 M01 180473 -03 1300

TOT.NUMB.INDIV./M3(PROT.EXCL.) 12180
DIAGRAM CONSTRUCTION (WITH MAX.AREA R=4CM):R= 3
DIAGRAM CONSTRUCTION (NO MAX.AREA):R= 4.41
DIAGRAM CONSTRUCTION (WITH MAX.AREA) ORGAN.-10PC:R= 1.16
DIAGRAM CONSTRUCTION (NO MAX.AREA) ORGAN.-10PC:R= 1.71

	TOT.NUMB./M3	TOT.ANG.REPR.	ANG.REPR.-10PC
CNIDARIA	20	0	3
ACNIDARIA	20	0	3
NEMATHELMINT.	240	7	46
MOLLUSCA (L)	540	15	105
ANNELIDA (L)	320	9	62
CRUSTACEA	10540		
NAU.COP.	5400	159	
COPEPODS	4940	146	
N+C CIRR.	180	5	35
OTHERS	20	0	3
BRYOZOA (L)	20	0	3
CHAETOGNATHA	0	0	0
ECHINOD. (L)	80	2	15
TUNICATA	380	11	74
PISCES (OVA)	20	0	3

STATION 2 M02 180473 -02 1600

TOT.NUMB.INDIV./M3(PROT.EXCL.) 13460
DIAGRAM CONSTRUCTION (WITH MAX.AREA R=4CM):R= 3.15
DIAGRAM CONSTRUCTION (NO MAX.AREA):R= 4.64
DIAGRAM CONSTRUCTION (WITH MAX.AREA) ORGAN.-10PC:R= .88
DIAGRAM CONSTRUCTION (NO MAX.AREA) ORGAN.-10PC:R= 1.3

	TOT.NUMB./M3	TOT.ANG.REPR.	ANG.REPR.-10PC
CNIDARIA	0	0	0
ACNIDARIA	40	1	13
NEMATHELMINT.	0	0	0
MOLLUSCA (L)	560	14	190
ANNELIDA (L)	60	1	20
CRUSTACEA	12460		
NAU.COP.	10700	286	
COPEPODS	1700	45	
N+C CIRR.	60	1	20
OTHERS	0	0	0
BRYOZOA (L)	40	1	13
CHAETOGNATHA	0	0	0
ECHINOD. (L)	20	0	6
TUNICATA	240	6	81
PISCES (OVA)	40	1	13

STATION 3 M03 180473 -02 1830

TOT.NUMB.INDIV./M3(PROT.EXCL.) 15400
DIAGRAM CONSTRUCTION (WITH MAX.AREA R=4CM):R= 3.37
DIAGRAM CONSTRUCTION (NO MAX.AREA):R= 4.96
DIAGRAM CONSTRUCTION (WITH MAX.AREA) ORGAN.-10PC:R= .43
DIAGRAM CONSTRUCTION (NO MAX.AREA) ORGAN.-10PC:R= .64

	TOT.NUMB./M3	TOT.ANG.REPR.	ANG.REPR.-10PC
CNIDARIA	0	0	0
ACNIDARIA	0	0	0
NEMATHELMINT.	120	2	166
MOLLUSCA (L)	1700	39	
ANNELIDA (L)	20	0	27
CRUSTACEA	13500		
NAU.COP.	10660	249	
COPEPODS	2780	64	
N+C CIRR.	60	1	83
OTHERS	0	0	0
BRYOZOA (L)	60	1	83
CHAETOGNATHA	0	0	0
ECHINOD. (L)	0	0	0
TUNICATA	0	0	0
PISCES (OVA)	0	0	0

STATION 4 M04 300473 -02 16.25

TOT.NUMB.INDIV./M3(PROT.EXCL.) 2200
DIAGRAM CONSTRUCTION (WITH MAX.AREA R=4CM):R= 1.27
DIAGRAM CONSTRUCTION (NO MAX.AREA):R= 1.87
DIAGRAM CONSTRUCTION (WITH MAX.AREA) ORGAN.-10PC:R= .4
DIAGRAM CONSTRUCTION (NO MAX.AREA) ORGAN.-10PC:R= .59

	TOT.NUMB./M3	TOT.ANG.REPR.	ANG.REPR.-10PC
CNIDARIA	0	0	0
ACNIDARIA	0	0	0
NEMATHELMINT.	20	3	32
MOLLUSCA (L)	20	3	32
ANNELIDA (L)	60	9	98
CRUSTACEA	2020		
NAU.COP.	1740	284	
COPEPODS	240	39	
N+C CIRR.	40	6	65
OTHERS	0	0	0
BRYOZOA (L)	20	3	32
CHAETOGNATHA	0	0	0
ECHINOD. (L)	0	0	0
TUNICATA	40	6	65
PISCES (OVA)	20	3	32

STATION 5 M05 240473 -02 15.30

TOT.NUMB.INDIV./M3(PROT.EXCL.) 17120
DIAGRAM CONSTRUCTION (WITH MAX.AREA R=4CM):R= 3.56
DIAGRAM CONSTRUCTION (NO MAX.AREA):R= 5.23
DIAGRAM CONSTRUCTION (WITH MAX.AREA) ORGAN.-10PC:R= .71
DIAGRAM CONSTRUCTION (NO MAX.AREA) ORGAN.-10PC:R= 1.04

	TOT.NUMB./M3	TOT.ANG.REPR.	ANG.REPR.-10PC
CNIDARIA	0	0	0
ACNIDARIA	40	0	21
NEMATHELMINT.	60	1	31
MOLLUSCA (L)	3580	75	
ANNELIDA (L)	360	7	190
CRUSTACEA	12920		
NAU.COP.	8100	170	
COPEPODS	4760	100	
N+C CIRR.	60	1	31
OTHERS	0	0	0
BRYOZOA (L)	0	0	0
CHAETOGNATHA	20	0	10
ECHINOD. (L)	40	0	21
TUNICATA	100	2	52
PISCES (OVA)	0	0	0

STATION 6 M06 240473 -02 13.30

TOT.NUMB.INDIV./M3(PROT.EXCL.) 2300
DIAGRAM CONSTRUCTION (WITH MAX.AREA R=4CM):R= 1.3
DIAGRAM CONSTRUCTION (NO MAX.AREA):R= 1.91
DIAGRAM CONSTRUCTION (WITH MAX.AREA) ORGAN.-10PC:R= .36
DIAGRAM CONSTRUCTION (NO MAX.AREA) ORGAN.-10PC:R= .53

	TOT.NUMB./M3	TOT.ANG.REPR.	ANG.REPR.-10PC
CNIDARIA	0	0	0
ACNIDARIA	0	0	0
NEMATHELMINT.	20	3	40
MOLLUSCA (L)	760	118	
ANNELIDA (L)	100	15	200
CRUSTACEA	1360		
NAU.COP.	980	153	
COPEPODS	380	59	
N+C CIRR.	0	0	0
OTHERS	0	0	0
BRYOZOA (L)	0	0	0
CHAETOGNATHA	0	0	0
ECHINOD. (L)	20	3	40
TUNICATA	40	6	80
PISCES (OVA)	0	0	0

STATION 7 M07 260473 -02 18.45

TOT.NUMB.INDIV./M3(PROT.EXCL.) 21580
DIAGRAM CONSTRUCTION (WITH MAX.AREA R=4CM):R= 4
DIAGRAM CONSTRUCTION (NO MAX.AREA):R= 5.87
DIAGRAM CONSTRUCTION (WITH MAX.AREA) ORGAN.-10PC:R= .78
DIAGRAM CONSTRUCTION (NO MAX.AREA) ORGAN.-10PC:R= 1.15

	TOT.NUMB./M3	TOT.ANG.REPR.	ANG.REPR.-10PC
CNIDARIA	0	0	0
ACNIDARIA	0	0	0
NEMATHELMINT.	0	0	0
MOLLUSCA (L)	8600	143	
ANNELIDA (L)	760	12	325
CRUSTACEA	12180		
NAU.COP.	9300	155	
COPEPODS	2840	47	
N+C CIRR.	40	0	17
OTHERS	0	0	0
BRYOZOA (L)	0	0	0
CHAETOGNATHA	20	0	8
ECHINOD. (L)	20	0	8
TUNICATA	0	0	0
PISCES (OVA)	0	0	0

STATION 8 M08 270473 -02 12.00.

TOT.NUMB.INDIV./M3(PROT.EXCL.) 13320
DIAGRAM CONSTRUCTION (WITH MAX.AREA R=4CM):R= 3.14
DIAGRAM CONSTRUCTION (NO MAX.AREA):R= 4.61
DIAGRAM CONSTRUCTION (WITH MAX.AREA) ORGAN.-10PC:R= .21
DIAGRAM CONSTRUCTION (NO MAX.AREA) ORGAN.-10PC:R= .3

	TOT.NUMB./M3	TOT.ANG.REPR.	ANG.REPR.-10PC
CNIDARIA	0	0	0
ACNIDARIA	0	0	0
NEMATHELMINT.	0	0	0
MOLLUSCA (L)	40	1	240
ANNELIDA (L)	0	0	0
CRUSTACEA	13260		
NAU.COP.	11860	320	
COPEPODS	1400	37	
N+C CIRR.	0	0	0
OTHERS	0	0	0
BRYOZOA (L)	0	0	0
CHAETOGNATHA	0	0	0
ECHINOD. (L)	20	0	120
TUNICATA	0	0	0
PISCES (OVA)	0	0	0

STATION 9 M09 270473 .01 0930

TOT.NUMB.INDIV./M3(PROT.EXCL.) 2140
DIAGRAM CONSTRUCTION (WITH MAX.AREA R=4CM):R= 1.25
DIAGRAM CONSTRUCTION (NO MAX.AREA):R= 1.85
DIAGRAM CONSTRUCTION (WITH MAX.AREA) ORGAN.-10PC:R= .38
DIAGRAM CONSTRUCTION (NO MAX.AREA) ORGAN.-10PC:R= .56

	TOT.NUMB./M3	TOT.ANG.REPR.	ANG.REPR.-10PC
CNIDARIA	0	0	0
ACNIDARIA	0	0	0
PRIMAT HELMINT.	0	0	0
MOLLUSCA (L)	0	0	0
ANNELIDA (L)	0	0	0
CRUSTACEA	2140		
MAL.COP.	1940	326	
COPEPODS	200	33	360
MYS. EUPH.	0	0	0
OTHERS	0	0	0
BRYOZOA (L)	0	0	0
CHAETOGNATHA	0	0	0
ECHINOD. (L)	0	0	0
TUNICATA	0	0	0
PISCES (OVA)	0	0	0

STATION 10 M 10 270473 .02 0800

TOT.NUMB.INDIV./M3(PROT.EXCL.) 11960
DIAGRAM CONSTRUCTION (WITH MAX.AREA R=4CM):R= 2.97
DIAGRAM CONSTRUCTION (NO MAX.AREA):R= 4.37
DIAGRAM CONSTRUCTION (WITH MAX.AREA) ORGAN.-10PC:R= 1.06
DIAGRAM CONSTRUCTION (NO MAX.AREA) ORGAN.-10PC:R= 1.59

	TOT.NUMB./M3	TOT.ANG.REPR.	ANG.REPR.-10PC
CNIDARIA	0	0	0
ACNIDARIA	0	0	0
PLATHELMINT.	80	2	18
MOLLUSCA (L)	460	13	103
ANNELIDA (L)	0	0	0
CRUSTACEA	11240		
MAL.COP.	10360	311	
COPEPODS	780	23	175
MYS. EUPH.	100	3	22
OTHERS	0	0	0
BRYOZOA (L)	0	0	0
CHAETOGNATHA	0	0	0
ECHINOD. (L)	60	2	13
TUNICATA	100	3	22
PISCES (OVA)	20	0	4

STATION 11 M11 260473 -02 1200

TOT.NUMB.INDIV./M3(PROT.EXCL.) 15680
DIAGRAM CONSTRUCTION (WITH MAX.AREA R=4CM):R= 3.4
DIAGRAM CONSTRUCTION (NO MAX.AREA):R= 5
DIAGRAM CONSTRUCTION (WITH MAX.AREA) ORGAN.-10PC:R= .95
DIAGRAM CONSTRUCTION (NO MAX.AREA) ORGAN.-10PC:R= 1.4

	TOT.NUMB./M3	TOT.ANG.REPR.	ANG.REPR.-10PC
CNIDARIA	0	0	0
ACNIDARIA	0	0	0
NEMATHELMINT.	20	0	5
MOLLUSCA (L)	560	12	162
ANNELIDA (L)	540	12	156
CRUSTACEA	14440		
NAU.COP.	12260	281	
COPEPODS	2180	50	
N+C CIRR.	0	0	0
OTHERS	0	0	0
BRYOZOA (L)	0	0	0
CHAETOGNATHA	0	0	0
ECHINOD. (L)	100	2	29
TUNICATA	20	0	5
PISCES (OVA)	0	0	0

STATION 12 M12 260473 -02 14.15

TOT.NUMB.INDIV./M3(PROT.EXCL.) 10380
DIAGRAM CONSTRUCTION (WITH MAX.AREA R=4CM):R= 2.77
DIAGRAM CONSTRUCTION (NO MAX.AREA):R= 4.07
DIAGRAM CONSTRUCTION (WITH MAX.AREA) ORGAN.-10PC:R= .27
DIAGRAM CONSTRUCTION (NO MAX.AREA) ORGAN.-10PC:R= .39

	TOT.NUMB./M3	TOT.ANG.REPR.	ANG.REPR.-10PC
CNIDARIA	0	0	0
ACNIDARIA	0	0	0
NEMATHELMINT.	0	0	0
MOLLUSCA (L)	40	1	144
ANNELIDA (L)	60	2	216
CRUSTACEA	10280		
NAU.COP.	8900	308	
COPEPODS	1380	47	
N+C CIRR.	0	0	0
OTHERS	0	0	0
BRYOZOA (L)	0	0	0
CHAETOGNATHA	0	0	0
ECHINOD. (L)	0	0	0
TUNICATA	0	0	0
PISCES (OVA)	0	0	0

STATION 13 M 13 020573 -02 17.40

TOT.NUMB.INDIV./M3(PROT.EXCL.) 3220
DIAGRAM CONSTRUCTION (WITH MAX.AREA R=4CM):R= 1.54
DIAGRAM CONSTRUCTION (NO MAX.AREA):R= 2.26
DIAGRAM CONSTRUCTION (WITH MAX.AREA) ORGAN.-10PC:R= .17
DIAGRAM CONSTRUCTION (NO MAX.AREA) ORGAN.-10PC:R= .25

	TOT.NUMB./M3	TOT.ANG.REPR.	ANG.REPR.-10PC
CNIDARIA	0	0	0
ACNIDARIA	0	0	0
NEMATHELMINT.	20	2	180
MOLLUSCA (L)	20	2	180
ANNELIDA (L)	0	0	0
CRUSTACEA	3180		
NAU.COP.	2320	259	
COPEPODS	860	96	
N+C CIRR.	0	0	0
OTHERS	0	0	0
BRYOZOA (L)	0	0	0
CHAETOGNATHA	0	0	0
ECHINOD. (L)	0	0	0
TUNICATA	0	0	0
PISCES (OVA)	0	0	0

STATION 14 M 14 020573 -02

TOT.NUMB.INDIV./M3(PROT.EXCL.) 6140
DIAGRAM CONSTRUCTION (WITH MAX.AREA R=4CM):R= 2.13
DIAGRAM CONSTRUCTION (NO MAX.AREA):R= 3.13
DIAGRAM CONSTRUCTION (WITH MAX.AREA) ORGAN.-10PC:R= .47
DIAGRAM CONSTRUCTION (NO MAX.AREA) ORGAN.-10PC:R= .69

	TOT.NUMB./M3	TOT.ANG.REPR.	ANG.REPR.-10PC
CNIDARIA	0	0	0
ACNIDARIA	0	0	0
NEMATHELMINT.	20	1	24
MOLLUSCA (L)	200	11	240
ANNELIDA (L)	20	1	24
CRUSTACEA	5840		
NAU.COP.	4660	273	
COPEPODS	1180	69	
N+C CIRR.	0	0	0
OTHERS	0	0	0
BRYOZOA (L)	20	1	24
CHAETOGNATHA	0	0	0
ECHINOD. (L)	0	0	0
TUNICATA	40	2	48
PISCES (OVA)	0	0	0

STATION 15 M 15 02 05 73 -02 14.30

TOT.NUMB.INDIV./M3(PROT.EXCL.) 14960
DIAGRAM CONSTRUCTION (WITH MAX.AREA R=4CM):R= 3.33
DIAGRAM CONSTRUCTION (NO MAX.AREA):R= 4.89
DIAGRAM CONSTRUCTION (WITH MAX.AREA) ORGAN.-10PC:R= .99
DIAGRAM CONSTRUCTION (NO MAX.AREA) ORGAN.-10PC:R= 1.46

	TOT.NUMB./M3	TOT.ANG.REPR.	ANG.REPR.-10PC
CNIDARIA	0	0	0
ACNIDARIA	0	0	0
NEMATHELMINT.	0	0	0
MOLLUSCA (L)	440	10	118
ANNELIDA (L)	60	1	16
CRUSTACEA	13620		
NAU.COP.	12020	289	
COPEPODS	1600	38	
N+C CIRR.	0	0	0
OTHERS	0	0	0
BRYOZOA (L)	40	0	10
CHAETOGNATHA	0	0	0
ECHINOD. (L)	180	4	48
TUNICATA	620	14	166
PISCES (OVA)	0	0	0

STATION 16 M 16 07 05 73 -02 18.30

TOT.NUMB.INDIV./M3(PROT.EXCL.) 3880
DIAGRAM CONSTRUCTION (WITH MAX.AREA R=4CM):R= 1.69
DIAGRAM CONSTRUCTION (NO MAX.AREA):R= 2.49
DIAGRAM CONSTRUCTION (WITH MAX.AREA) ORGAN.-10PC:R= .67
DIAGRAM CONSTRUCTION (NO MAX.AREA) ORGAN.-10PC:R= .99

	TOT.NUMB./M3	TOT.ANG.REPR.	ANG.REPR.-10PC
CNIDARIA	0	0	0
ACNIDARIA	0	0	0
NEMATHELMINT.	0	0	0
MOLLUSCA (L)	0	0	0
ANNELIDA (L)	0	0	0
CRUSTACEA	3860		
NAU.COP.	3260	302	
COPEPODS	340	31	197
N+C CIRR.	260	24	150
OTHERS	0	0	0
BRYOZOA (L)	0	0	0
CHAETOGNATHA	0	0	0
ECHINOD. (L)	0	0	0
TUNICATA	20	1	11
PISCES (OVA)	0	0	0

STATION 17 M 17 040573 -02 0615

TOT.NUMB.INDIV./M3(PROT.EXCL.) 4420
DIAGRAM CONSTRUCTION (WITH MAX.AREA R=4CM):R= 1.81
DIAGRAM CONSTRUCTION (NO MAX.AREA):R= 2.65
DIAGRAM CONSTRUCTION (WITH MAX.AREA) ORGAN.-10PC:R= .47
DIAGRAM CONSTRUCTION (NO MAX.AREA) ORGAN.-10PC:R= .69

	TOT.NUMB./M3	TOT.ANG.REPR.	ANG.REPR.-10PC
CNIDARIA	0	0	0
ACNIDARIA	0	0	0
NEMATHELMINT.	20	1	24
MOLLUSCA (L)	100	8	120
ANNELIDA (L)	80	6	96
CRUSTACEA	4140		
NAU.COP.	2860	232	
COPEPODS	1260	102	
N+C CIRR.	0	0	0
OTHERS	20	1	24
BRYOZOA (L)	0	0	0
CHAETOGNATHA	0	0	0
ECHINOD. (L)	0	0	0
TUNICATA	80	6	96
PISCES (OVA)	0	0	0

STATION 18 M18 030573 -02 08.30

TOT.NUMB.INDIV./M3(PROT.EXCL.) 4480
DIAGRAM CONSTRUCTION (WITH MAX.AREA R=4CM):R= 1.82
DIAGRAM CONSTRUCTION (NO MAX.AREA):R= 2.67
DIAGRAM CONSTRUCTION (WITH MAX.AREA) ORGAN.-10PC:R= .48
DIAGRAM CONSTRUCTION (NO MAX.AREA) ORGAN.-10PC:R= .71

	TOT.NUMB./M3	TOT.ANG.REPR.	ANG.REPR.-10PC
CNIDARIA	0	0	0
ACNIDARIA	0	0	0
NEMATHELMINT.	60	4	67
MOLLUSCA (L)	120	9	135
ANNELIDA (L)	80	6	90
CRUSTACEA	4160		
NAU.COP.	2880	231	
COPEPODS	1280	102	
N+C CIRR.	0	0	0
OTHERS	0	0	0
BRYOZOA (L)	0	0	0
CHAETOGNATHA	0	0	0
ECHINOD. (L)	0	0	0
TUNICATA	20	1	22
PISCES (OVA)	40	3	45

STATION 19 M 19 03 05 73 -02 16.30

TOT.NUMB.INDIV./M3(PROT.EXCL.) 7860
DIAGRAM CONSTRUCTION (WITH MAX.AREA R=4CM):R= 2.41
DIAGRAM CONSTRUCTION (NO MAX.AREA):R= 3.54
DIAGRAM CONSTRUCTION (WITH MAX.AREA) ORGAN.-10PC:R= .43
DIAGRAM CONSTRUCTION (NO MAX.AREA) ORGAN.-10PC:R= .64

	TOT.NUMB./M3	TOT.ANG.REPR.	ANG.REPR.-10PC
CNIDARIA	0	0	0
ACNIDARIA	0	0	0
NEMATHELMINT.	40	1	55
MOLLUSCA (L)	40	1	55
ANNELIDA (L)	20	0	27
CRUSTACEA	7600		
NAU.COP.	5640	258	
COPEPODS	1960	89	
N+C CIRR.	0	0	0
OTHERS	0	0	0
BRYOZOA (L)	20	0	27
CHAETOGNATHA	0	0	0
ECHINOD. (L)	20	0	27
TUNICATA	100	4	138
PISCES (OVA)	20	0	27

STATION 20 M 20 03 05 73 -02 16.35

TOT.NUMB.INDIV./M3(PROT.EXCL.) 10180
DIAGRAM CONSTRUCTION (WITH MAX.AREA R=4CM):R= 2.74
DIAGRAM CONSTRUCTION (NO MAX.AREA):R= 4.03
DIAGRAM CONSTRUCTION (WITH MAX.AREA) ORGAN.-10PC:R= .98
DIAGRAM CONSTRUCTION (NO MAX.AREA) ORGAN.-10PC:R= 1.44

	TOT.NUMB./M3	TOT.ANG.REPR.	ANG.REPR.-10PC
CNIDARIA	0	0	0
ACNIDARIA	0	0	0
NEMATHELMINT.	40	1	11
MOLLUSCA (L)	440	15	121
ANNELIDA (L)	180	6	49
CRUSTACEA	8880		
NAU.COP.	7300	258	
COPEPODS	1580	55	
N+C CIRR.	0	0	0
OTHERS	0	0	0
BRYOZOA (L)	20	0	5
CHAETOGNATHA	0	0	0
ECHINOD. (L)	140	4	38
TUNICATA	480	16	132
PISCES (OVA)	0	0	0

STATION 21 M 21 030573 -02 06.45

TOT.NUMB.INDIV./M3(PROT.EXCL.) 7440
DIAGRAM CONSTRUCTION (WITH MAX.AREA R=4CM):R= 2.34
DIAGRAM CONSTRUCTION (NO MAX.AREA):R= 3.45
DIAGRAM CONSTRUCTION (WITH MAX.AREA) ORGAN.-10PC:R= .65
DIAGRAM CONSTRUCTION (NO MAX.AREA) ORGAN.-10PC:R= .96

	TOT.NUMB./M3	TOT.ANG.REPR.	ANG.REPR.-10PC
CNIDARIA	0	0	0
ACNIDARIA	0	0	0
NEMATHELMINT.	140	6	86
MOLLUSCA (L)	100	4	62
ANNELIDA (L)	180	8	111
CRUSTACEA	6980		
NAU.COP.	4680	226	
COPEPODS	2180	105	
N+C CIRR.	20	0	12
OTHERS	100	4	62
BRYOZOA (L)	0	0	0
CHAETOGNATHA	0	0	0
ECHINOD. (L)	20	0	12
TUNICATA	0	0	0
PISCES (OVA)	20	0	12

STATION 22 M 22 030573 -02 8.35

TOT.NUMB.INDIV./M3(PROT.EXCL.) 2160
DIAGRAM CONSTRUCTION (WITH MAX.AREA R=4CM):R= 1.26
DIAGRAM CONSTRUCTION (NO MAX.AREA):R= 1.85
DIAGRAM CONSTRUCTION (WITH MAX.AREA) ORGAN.-10PC:R= .34
DIAGRAM CONSTRUCTION (NO MAX.AREA) ORGAN.-10PC:R= .5

	TOT.NUMB./M3	TOT.ANG.REPR.	ANG.REPR.-10PC
CNIDARIA	0	0	0
ACNIDARIA	0	0	0
NEMATHELMINT.	20	3	45
MOLLUSCA (L)	0	0	0
ANNELIDA (L)	20	3	45
CRUSTACEA	2080		
NAU.COP.	1340	223	
COPEPODS	660	110	
N+C CIRR.	0	0	0
OTHERS	80	13	180
BRYOZOA (L)	0	0	0
CHAETOGNATHA	0	0	0
ECHINOD. (L)	0	0	0
TUNICATA	40	6	90
PISCES (OVA)	0	0	0

STATION 23 M 23 030573 -02 10.10

TOT.NUMB.INDIV./M3(PROT.EXCL.) 3320
DIAGRAM CONSTRUCTION (WITH MAX.AREA R=4CM):R= 1.56
DIAGRAM CONSTRUCTION (NO MAX.AREA):R= 2.3
DIAGRAM CONSTRUCTION (WITH MAX.AREA) ORGAN.-10PC:R= .24
DIAGRAM CONSTRUCTION (NO MAX.AREA) ORGAN.-10PC:R= .35

	TOT.NUMB./M3	TOT.ANG.REPR.	ANG.REPR.-10PC
CNIDARIA	0	0	0
ACNIDARIA	0	0	0
NEMATHELMINT.	0	0	0
MOLLUSCA (L)	0	0	0
ANNELIDA (L)	20	2	90
CRUSTACEA	3260		
NAU.COP.	1760	190	
COPEPODS	1480	160	
N+C CIRR.	0	0	0
OTHERS	20	2	90
BRYOZOA (L)	0	0	0
CHAETOGNATHA	0	0	0
ECHINOD. (L)	20	2	90
TUNICATA	20	2	90
PISCES (OVA)	0	0	0

STATION 24 M 24 03 05 73 -02 11.45

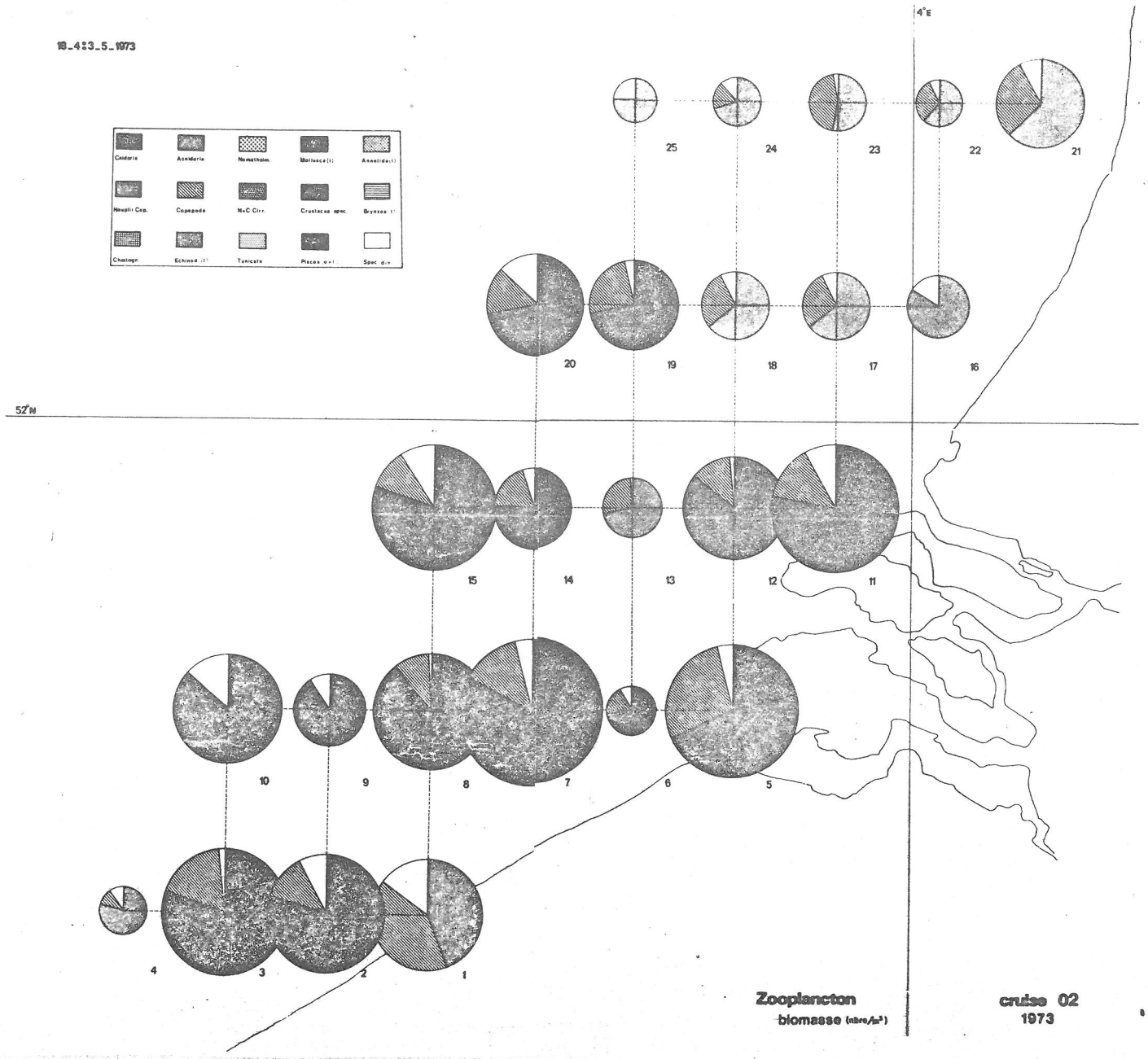
TOT.NUMB.INDIV./M3(PROT.EXCL.) 2000
DIAGRAM CONSTRUCTION (WITH MAX.AREA R=4CM):R= 1.21
DIAGRAM CONSTRUCTION (NO MAX.AREA):R= 1.78
DIAGRAM CONSTRUCTION (WITH MAX.AREA) ORGAN.-10PC:R= .42
DIAGRAM CONSTRUCTION (NO MAX.AREA) ORGAN.-10PC:R= .61

	TOT.NUMB./M3	TOT.ANG.REPR.	ANG.REPR.-10PC
CNIDARIA	0	0	0
ACNIDARIA	0	0	0
NEMATHELMINT.	40	7	60
MOLLUSCA (L)	20	3	30
ANNELIDA (L)	100	18	150
CRUSTACEA	1760		
NAU.COP.	1400	252	
COPEPODS	360	64	
N+C CIRR.	0	0	0
OTHERS	0	0	0
BRYOZOA (L)	0	0	0
CHAETOGNATHA	0	0	0
ECHINOD. (L)	40	7	60
TUNICATA	40	7	60
PISCES (OVA)	0	0	0

STATION 25 M 25 030573 -02 13.15

TOT.NUMB.INDIV./M3(PROT.EXCL.) 1640
DIAGRAM CONSTRUCTION (WITH MAX.AREA R=4CM):R= 1.1
DIAGRAM CONSTRUCTION (NO MAX.AREA):R= 1.61
DIAGRAM CONSTRUCTION (WITH MAX.AREA) ORGAN.-10PC:R= .54
DIAGRAM CONSTRUCTION (NO MAX.AREA) ORGAN.-10PC:R= .79

	TOT.NUMB./M3	TOT.ANG.REPR.	ANG.REPR.-10PC
CNIDARIA	0	0	0
ACNIDARIA	0	0	0
NEMATHELMINT.	0	0	0
MOLLUSCA (L)	120	26	108
ANNELIDA (L)	60	13	54
CRUSTACEA	1380		
NAU.COP.	1240	272	
COPEPODS	140	30	126
N+C CIRR.	0	0	0
OTHERS	0	0	0
BRYOZOA (L)	0	0	0
CHAETOGNATHA	0	0	0
ECHINOD. (L)	20	4	18
TUNICATA	40	8	36
PISCES (OVA)	20	4	18


18-4:3-5-1973
Cnidaria
Acnidaria
Nemathelm.
Mollusca (l)
Annelida (l)
Nauplii Cop.
Copepode
N+C Cirr.
Crustacea spec
Bryozoa (l)
Chaetogn
Echinod. (l)
Tunicata
Pisces o+l
Spec div
4°E
52°N
25
24
23
22
21
20
19
18
17
16
15
14
13
12
11
10
9
8
7
6
5
4
3
2
1
Zooplancton
biomasse (libre/m³)
cruise 02
1973

Laboratorium voor Ekologie en Systematiek - V.U.B.

Onderzoek CIPS
Cruise 02 - 1973 april

	M01 180473 13.00 -3m	M02 180473 16.00 -2m	M03 180473 18.30 -2m	M04 200473 16.25 -2m
Vers gewicht (mg/m³)	min.-max.	min.-max.	min.-max.	min.-max.
Cnidaria				
Acnidaria				
Ctenophora				
Nemathelminthes				
Rotatoria spec.				
Nematoda spec.	4 - 22		3 - 22	3 - 22
Mollusca				
Gasteropoda (1)			120	
Lamellibranchia (1)	1350	1400	4200	50
Annelida				
Polychaeta spec.	1800 - 3390	360 - 678	120 - 226	360 - 678
Lanice spec.	220 - 600			
Crustacea				
Copepoda nauplii	8100 - 34560	16050 - 68480	15990 - 68224	2610 - 11136
Copepoda copepodiet	28672 - 89600	9216 - 28800	16256 - 50800	1152 - 3600
Copepoda adult.	8996 - 25668	4576 - 10982	5460 - 14514	1948 - 3148
Cirripedia (1)	1080 - 1800	360 - 600	360 - 600	240 - 400
Ostracoda				
Decapoda (1)				
Mysidacea				
Cumacea				
Isopoda				
Amphipoda				
Cladocera	480 - 1400			
Bryozoa (1)				
Chaetognatha Sagitta spec.				
Echinodermata Larvae spec.				
Tunicata Oikopleura	19760 - 45980	12480 - 29040		2080 - 4840
Pisces (e - 1)	5360 - 42892	10720 - 85784		5360 - 42892
TOTAAL	75822 - 247260	55162 - 225764	42508 - 138704	13802 - 66764
GEMIDDELDE	161540	140464	90606	40286
Drooggewicht (mg/m³)	32308	28093	18121	8057
Koolstof (mg/m³)	12923	11237	7248	3223
Stikstof (mg/m³)	3554	3090	1993	886
Fosfor (mg/m³)	323	281	181	81

Laboratorium voor Ekologie en Systematiek - V.U.B.

Onderzoek CIPS
Cruise 02 - 1973 april

	M05 240473 1530 -2m	M06 240473 13.30 -2m	M07 260473 18.45 -2m	M08 220473 12.00 -2m
Vers gewicht (mg/m³)	min.-max.	min.-max.	min.-max.	min.-max.
Cnidaria				
Acnidaria				
Ctenophora				
Nemathelminthes				
Rotatoria spec.				
Nematoda spec.				
Mollusca				
Gasteropoda (l)	120		240	
Lamellibranchia (l)	8900	1300	21400	100
Annelida				
Polychaeta spec.	2160-4068	600 - 1130	4560-8588	
Lanice spec.				
Crustacea				
Copepoda nauplii	12150 - 51840	1470 - 6272	13950 - 59520	17790 - 75904
Copepoda copepodiet	19968 - 62400	512 - 1600	16768 - 52400	7040 - 22000
Copepoda adult.	38392 - 118698	7338 - 20724	5974 - 12122	17288 - 32652
Cirripedia (l)	360 - 600		240 - 400	
Ostracoda				
Decapoda (l)				
Mysidacea				
Cumacea				
Isopoda				
Amphipoda				
Cladocera				
Bryozoa (l)				
Chaetognatha Sagitta spec.	220 - 3640		220 - 3640	
Echinodermata Larvae spec.				
Tunicata Oikopleura	5200 - 12100	2080 - 4840		
Pisces (e - l)				
TOTAAL	87470 - 215710	13900 - 36466	63478 - 158310	42218 - 130656
GEMIDDELDE	151590	25184	110894	86440
Drooggewicht mg/m³	30318	5037	22179	17288
Koolstof mg/m³	12127	2015	8872	6915
Stikstof mg/m³	3335	554	2440	1902
Fosfor mg/m³	303	50	222	173

Laboratorium voor Ekologie en Systematiek - V.U.B.

Onderzoek CIPS
Cruise 02 - 1973 ahd

	M09 270473 09.30 -2m	M10 270473 08.00 -2m	M11 260473 12.00	M12 260473 14.15 -2m
— Vers gewicht (mg/m³)	min.-max.	min.-max.	min.-max.	min.-max.
Cnidaria				
Acnidaria				
Ctenophora				
Nemathelminthes				
Rotatoria spec.				
Nematoda spec.				
Mollusca				
Gasteropoda (1)				
Lamellibranchia (1)		1150	240 1300	100
Annelida				
Polychaeta spec.			3120-5876	360 - 678
Lanice spec.			220 - 600	
Crustacea				
Copepoda nauplii	2910 - 12416	15540-66304	18890-78464	13350 - 56960
Copepoda copepodiet	1280 - 4000	4864-15200	9984-31200	8320 - 26.000
Copepoda adult.		678 - 812	14044-46234	1768 - 6096
Cirripedia (1)		600 - 1000		
Ostracoda				
Decapoda (1)				
Mysidacea				
Cumacea				
Isopoda				
Amphipoda				
Cladocera				
Bryozoa (1)				
Chaetognatha Sagitta spec.				
Echinodermata Larvae spec.				
Tunicata Oikopleura		5200 - 12100	1040 - 2420	
Pisces (e - 1)		5360 - 42892		
TOTAAL	4190 - 16416	33392 - 139458	48338-166394	23898 - 89834
GEMIDDELDE	10304	86425	107366	56866
— Drooggewicht mg/m³	2061	17285	21473	11373
— Koolstof mg/m³	824	6914	8589	4549
— Stikstof mg/m³	227	1901	2362	1251
— Fosfor mg/m³	21	173	215	113

Laboratorium voor Ekologie en Systematiek - V.U.B.

Onderzoek cips
Cruise 02 - 1973 april

	M13 020573 1740 -2m	M14 020573	M15 020573 1430	M16 070573 1830 -2m
— Vers gewicht (µg/m³)	min.-max.	min.-max.	min.-max.	min.-max.
Cnidaria				
Acnidaria				
Ctenophora				
Nemathelminthes				
Rotatoria spec.				
Nematoda spec.	4 - 22	4 - 22		
Mollusca				
Gasteropoda (1)		120	360	
Lamellibranchia (1)	50	450	950	
Annelida				
Polychaeta spec.		120 - 226	360 - 678	
Lanice spec.				
Crustacea				
Copepoda nauplii	3480 - 14848	6990 - 29824	18030 - 76928	4890 - 20864
Copepoda copepodiet	4224 - 13200	4864 - 15200	8064 - 25200	2048 - 6400
Copepoda adult.	5804 - 16386	11646 - 23916	12398 - 29442	678 - 812
Cirripedia (1)				1560 - 2600
Ostracoda				
Decapoda (1)				
Mysidacea				
Cumacea				
Isopoda				
Amphipoda				
Cladocera				
Bryozoa (1)				
Chaetognatha Sagitta spec.				
Echinodermata Larvae spec.				
Tunicata Oikopleura		2080 - 4840	32240 - 75020	1040 - 2420
Pisces (e - 1)				
TOTAAL	13562 - 44506	26274 - 74598	73352 - 208578	10216 - 30496
GEMIDDELDE	29034	50436	140965	20356
— Drooggewicht µg/m³	5807	10087	28193	4071
— Koolstof µg/m³	2323	4035	11277	1628
— Stikstof µg/m³	639	1110	3101	448
— Fosfor µg/m³	58	101	282	41

Laboratorium voor Ekologie en Systematiek - V.U.B.

Onderzoek CIPS
Cruise 02 - 1973 april

	M17 040573 0615 -2m	M18 030573 0830 -2m	M13 030573 1830 -2m	M20 030573 16.35 -2m
Vers gewicht (mg/m³)	min.-max.	min.-max.	min.-max.	min.-max.
Cnidaria				
Acnidaria				
Ctenophora				
Nemathelminthes				
Rotatoria spec.				
Nematoda spec.	4 - 22	8 - 44		8 - 44
Mollusca				
Gasteropoda (1)				120
Lamellibranchia (1)	250	300	100	1050
Annelida				
Polychaeta spec.	480 - 904	480 - 904	120 - 226	1080 - 2034
Lanice spec.				
Crustacea				
Copepoda nauplii	4290 - 18304	4320 - 18432	8460 - 36096	10950 - 46720
Copepoda copepodiet	6144 - 19200	5760 - 18000	10752 - 33600	8704 - 27200
Copepoda adult.	8706 - 19248	11644 - 24958	6690 - 11614	6114 - 13750
Cirripedia (1)				
Ostracoda				
Decapoda (1)				
Mysidacea	19460 - 30400			
Cumacea				
Isopoda				
Amphipoda				
Cladocera				
Bryozoa (1)				
Chaetognatha Sagitta spec.				
Echinodermata Larvae spec.				
Tunicata Oikopleura	4160 - 9680	1040 - 2420	5200 - 12100	24960 - 58080
Pisces (e - 1)		5360 - 42892	5360 - 42892	
TOTAAL	43494 - 98008	28912 - 107950	36682 - 136628	52986 - 148998
GEMIDDELDE	70751	68431	86655	100992
Drooggewicht mg/m³	14150	13686	17331	20198
Koolstof mg/m³	5660	5474	6932	8079
Stikstof mg/m³	1557	1505	1906	2222
Fosfor mg/m³	142	137	173	202

Laboratorium voor Ekologie en Systematiek - V.U.B.

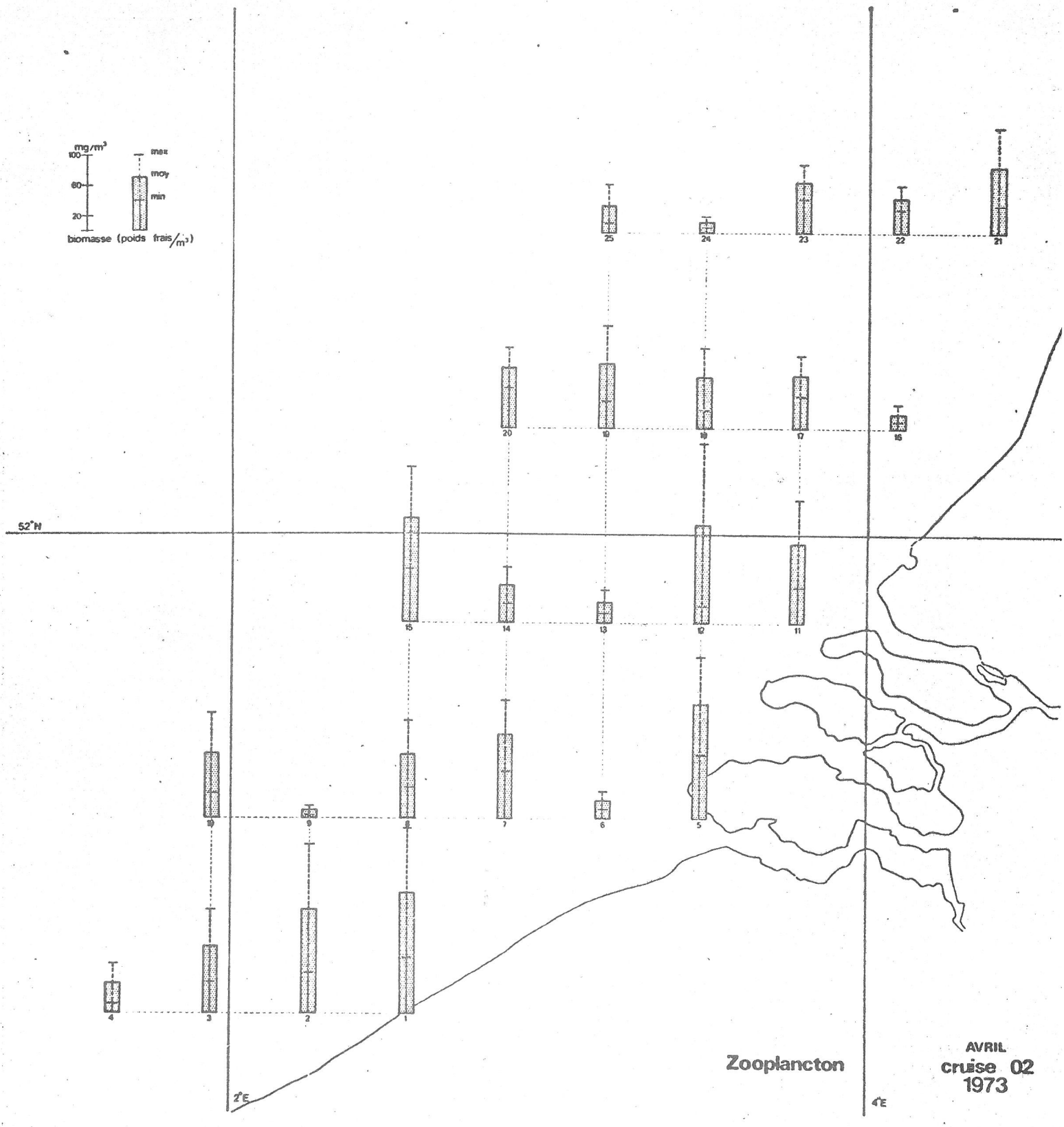
Onderzoek CIPS
Cruise 02 - 1973 avril

	M21 030573 0645 -2m	M22 030573 0835 -2m	M23 030573 1010 -2m	M24 030573 1145 -2m
— Vers gewicht (mg/m³)	min.-max.	min.-max.	min.-max.	min.-max.
Cnidaria				
Acnidaria				
Ctenophora				
Nemathelminthes				
Rotatoria spec.				
Nematoda spec.				
Mollusca				
Gasteropoda (1)	120			
Lamellibranchia (1)	200			50
Annelida				
Polychaeta spec.	1080-2034	120-226	120-226	600-1130
Lanice spec.				
Crustacea				
Copepoda nauplii	7020-29950	2010-8576	2640-11264	2100-8980
Copepoda copepodiet	11904-37200	3968-12400	6528-20400	1920-6000
Copepoda adult.	9354-21062	494-1706	15460-27152	302-1254
Cirripedia (1)	120 - 200			
Ostracoda				
Decapoda (1)		19460-30400	19460-30400	
Mysidacea				
Cumacea				
Isopoda				
Amphipoda				
Cladocera	2400-7000	1920-5600		
Bryozoa (1)				
Chaetognatha Sagitta spec.				
Echinodermata Larvae spec.				
Tunicata Oikopleura		2080-4840	1040-2420	2080-4840
Pisces (e - 1)	5360-42892			
TOTAAL	37558-140658	30052-63748	45248-91862	7652-22234
GEMIDDELDE	89108	46900	68555	14943
— Drooggewicht mg/m³	17822	9380	13711	2989
— Koolstof mg/m³	7129	3752	5484	1196
— Stikstof mg/m³	1960	1032	1508	329
— Fosfor mg/m³	178	94	137	30

Laboratorium voor Ekologie en Systematiek - V.U.B.

Onderzoek cips
Cruise 02 - 1973 april.

	H25 1315 030573 -2m			
— Vers gewicht (mg/m³)	min.-max.	min.-max.	min.-max.	min.-max.
Cnidaria				
Acnidaria				
Ctenophora				
Nemathelminthes				
Rotatoria spec.				
Nematoda spec.				
Mollusca				
Gasteropoda (1)				
Lamellibranchia (1)	300			
Annelida				
Polychaeta spec.	360 - 678			
Lanice spec.				
Crustacea				
Copepoda nauplii	1860 - 7936			
Copepoda copepodiet	512 - 1600			
Copepoda adult.	2138 - 4898			
Cirripedia (1)				
Ostracoda				
Decapoda (1)				
Mysidacea				
Cumacea				
Isopoda				
Amphipoda				
Cladocera				
Bryozoa (1)				
Chaetognatha Sagitta spec.				
Echinodermata Larvae spec.				
Tunicata Oikopleura	2080 - 4840			
Pisces (e - 1)	5360 - 42892			
TOTAAL	12610 - 63144			
GEMIDDELDE	37877			
— Drooggewicht mg/m³	7575			
— Koolstof mg/m³	3030			
— Stikstof mg/m³	833			
— Fosfor mg/m³	76			



Zooplancton

AVRIL
cruise 02
1973

COMMENTAIRE

Cette croisière d'avril 1973 nous montre une distribution de la biomasse zooplanctonique qui suit un gradient décroissant du sud vers le nord d'une part, et de la côte vers le large d'autre part, ce second gradient étant surtout visible dans les trois premiers transects.

Ces biomasses ne sont pas très élevées (en tout cas beaucoup moins qu'au mois de juillet) ce qui nous donne à penser que le "bloom" du zooplancton n'a pas encore eu lieu.

Le fait remarquable de cette croisière de prélèvements est que la biomasse zooplanctonique est dominée par la biomasse des Copépodes.

La biomasse moyenne des Copépodes des points 1 à 15 est de 64 mg/m^3.

La biomasse moyenne des Copépodes des points 16 à 25 est de 33,5 mg/m^3.

Dans les mêmes zones, la biomasse moyenne d'Oikopleura des points 1 à 15 est de 9 mg/m^3 et la biomasse moyenne d'Oikopleura des points 16 à 25 est de 7 mg/m^3.